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AMERICAN DYESTUFF REPORTER

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The First of Two Articles by Dr. Bernhard C. Hesse and Joseph H. Choate, Jr.

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DYESTUFFS, COLORS and ALLIED CHEMICALS

"Circulated Everywhere Dyestuffs are Used"

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MORE ABOUT SWISS DYES

PART II OF "SEEING SWITZERLAND"

A Condensed History of the Development of Azo, Vat and Sulphur Colors by the Society of Chemical Industry in Basle

THE Patent Phosphines GG, G, R and M, yellow, orange and brown basic colors, which have gained great importance, especially in leather dyeing, were discovered in 1894 by the Society of Chemical Industry in Basle. They were produced by treating Acridine Yellow (diamidodimethylacridine) with alkalizing agents, and are readly solubie dyestuffs with properties similar to the so-called phosphines obtained in the manufacture of magenta. Various Acridine colors are known to the trade as Brilliant Phosphine 5G, G and R, and Patent Phosphine GGN and GN. As ammonium compounds they are fast to alkali and are not precapitated in calcareous water

Azo Colors

In the domain of the azo colors, beginning with such basic azo dyestuffs as Chrysoidine and Bismarck Brown, rapid advances have been made by the Society since the middle of the seventies. The first direct cotton dyestuff was Congo Red, discovered by Boettiger in 1884 and produced by the combination of tetrazotized benzidene with 1:4-naphthylaminsulphonic acid. In the early days of the benzidene colors, chemists were restricted to a comparatively small number of azo-components, and to some few naphthylamine and naphtholsulphonic acids, but this hindrance was soon overcome by the discovery of new naphthalene compounds with which it was possible to produce direct azo dyestuffs in all the colors of the rainbow. In 1888 the first amidonaphthol (2.7-amidonaphthol) was produced in the laboratories of the Society.

A few years later several acids (dioxnaphthoic acids, dioxnaphthosulphonic acids and dioxynaphthalenesulphonic acids) were discovered and put to use for the manufacture of blue and gray direct colors, including Direct Gray, Direct Blues and Indazurine.

In 1888 the Society also showed the way to produce azo dyestuffs which themselves could be further diazotized either in substance or on the fiber, and the world came to know Direct Indigo Blue A and BK.

By the nitration of benzidene the society arrived at Anthracene Red. This proved very valuable for wool dyeing, as it yields bright red shades fast to washing, milling and to light. Cochenille Substitute, a color especially adapted to wool printing, belongs in this category. Another important azo color for wool dyeing was Tartrazin, the first pyrazolon azo color, invented by the Society in 1884. It dyes wool pure yellow shades in an acid bath.

In the year 1892 the researchers of the Society found that the red monoazo dyestuffs derived from alphanaphthol-sulphonic acids and diazonapthalene sulphonic acids by careful treatment with chromic acid, either in substance or on the wool fiber, can be converted into new fast colors dyeing violet or blue-black shades.

Acetyl-H-acid, an important intermediate, was produced by the Society in 1899, and from this was produced Chlorantine Blue, Chlorantine Bordeaux and a number of level dyeing red wool colors (Kiton Red).

The year 1902 is marked in the history of the Society as the "Year of the Rosanthrenes"—the first red dyestuffs which by diazotizing and developing on the fiber did not turn to blue or black but retained their original clear red shade. Among the new diazotizing dyestuffs placed upon the market were Rosanthrene O, R, B and A. From 1906 to 1909 other brands, Rosanthrene AW, GW and BW, which were considerably faster to washing than the earlier products, followed. Rosanthrene Bordeaux, Rosanthrene Pink, Rosanthrene Violet and Rosanthrene Orange were added to the series. The Direct Fast Scarlets G, R, etc., were later derived from the Rosanthrene series, while for the wool dyer, Chrome Fast Cyanine B and Chrome Fast Cyanine G are chrome colors derived from orthodiazo-naphtholsulphonic acids. Brown mordant colors, known as Chrome Fast Brown A, P and T, have been manufactured by the society since 1904. Among the acid wool azo colors which do not require an after-treatment with chromates are the yellow pyrazolon dyestuffs Pyrazine Yellow, Kiton Yellow, Kiton Fast Yellow, etc., which dye level and yield exceedingly clear shades of excellent fastness to light.

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The Sulphur Colors

The first sulphur color, the so-called Cachou de Laval, was made in 1873 by Croissant and Bretoniere by melting various organic substances such as sawdust, bran, etc., with sulphur and caustic soda. For years this product, which dyes unmordanted cotton in grayish-brown shades, was looked upon as a dyestuff curiosity, being at that time the only representative of the sulphur dyes, and it was not until 1893 that R. Vidal succeeded in producing black sulphur dyestuffs (Vidal Black), which led to important research in which the Society played a prominent part. The year 1898 saw

the discovery and marketing of Pyrogene Deep Black, which was followed a year later by Pyrogene Direct Blue, green shade and red shade—the first blue sulphur colors. The next discovery was that of the well-known Thiophenol Black T, which has acquired great importance on account of its tinctorial power and its low cost. Yellowish brown sulphur colors were manufactured by the Society in 1900, which were later followed by the production of nitrobenzyl and nitrobenzylidene compounds yielding olive-colored, reddish-brown, yellowish-brown and yellow sulphur dyestuffs. These products of the Society include Pyrogene Brown G, Pyrogene Cutch G and B, Pyrogene Cutch Brown 2G and 2R Extra, Pyrogene Yellow Brown RS, Pyrogene Olive 3G and the first-known yellow sulphur dyestuff, Pyrogene Yellow M.

In the year 1903 the Society discovered an economical and simple method of producing the indophenols used in the manufacture of black, blue and green sulphur dyestuffs. The various brands of Pyrogene Indigo, Pyrogene Blue and Pyrogene Green, which have proved exceptionally valuable to all branches of the cotton-dyeing industry, are all included in this class.

Vat Colors

The part played by the Society in the development of the all-important vat colors was a vital one. Up to the beginning of the twentieth century only one vat dyestuff, Indigo, was known. This had been employed universally for thousands of years for the production of fast blues, and was obtained principally from India. Although a large number of syntheses were developed and partly worked on a commercial scale, the first one with any prospect of becoming a successful competitor of the natural product was based on the synthesis of Heumann in 1890 (melting phenylglycine

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with caustic alkali). A process of the Basle Chemical Works, which has been amalgamated with the Society since 1908, was protected by letters patent in that year, but a more recent process, based on the use of sodium anilide as the water-binding agent in the indoxyl melt, has since been evolved. The Society began the manufacture of Synthetic Indigo in 1910, and the necessary chemicals, such as caustic alkali, metallic sodium and chlorine, are produced on a large scale by new processes invented by the society.

The first ten years of the present century are remarkable for the large number of newly discovered vat colors the fastness of which not only equals but considerably surpasses that of Indigo. In 1901 the first vat colors of the anthraquinone series, Indanthrene and Flavanthrene of the Badische Company, were discovered, and in 1905 Thioindigo Red was brought into being by Friedlander.

Of the Swiss manufacturers, the Society was the only firm to enter into research in this field. Primarily the research was limited to vat colors of indigo character containing sulphur. In the latter part of 1905 it perfected a new and simple process of manufacturing Thioindigo Red whereby the pure dyestuff is obtained in one operation in a crystalline state. This was Ciba Pink B. Shortly afterward came the production of the so-called Vat Blue, which is of little tinctorial value but which is a valuable product for the manufacture of other vat colors. By the introduction of bromine into the molecule of Vat Blue this color was converted into dyestuffs which dye cotton in blue shades, turning to fast gray, bluish violet and reddish violet. These are known respectively as Ciba Gray G and Ciba Violet B and 3B, and are developed in a boiling soap solution. Similarly the bromination of Thioindigoscarlet R, of little importance in itself, gave Ciba Red G, of excellent fastness, while brominated Thioindigo Red yields Ciba Bordeaux B and Ciba Red B.

Ciba Scarlet G, a red vat color which dyes both cotton and wool in exceptionally bright and clear scarlet shades, was produced in 1907 by the Basle Chemical Works, and was the first representative of a new group of vat colors, Ciba Red R being a bromide derivative thereof and Ciba Orange a close relative.

The results obtained by the halogenation of dyestuffs of the thioindigo series led to an analogous treatment of Indigo. In 1907 the Society found that by a very smooth reaction three and four atoms of bromine could be introduced into the Indigo molecule, with the result that new dyestuffs were obtained which possessed considerably higher affinity for the vegetable fiber and better fastness to washing than Indigo. Ciba Blue B and 2B are examples, while Ciba Brown R is a brown vat dyestuff obtained by brominating p-p-diamidoindigo, itself a valueless product for tinctorial purposes.

(Continued on page 12.)

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OPTIMISM NOW JUSTIFIED

There is no doubt that events favorable to the American dyestuff industry have been occurring with remarkable frequency during recent weeks. Foremost among these was the recent action of the War Trade Board, a full account of which was given in our issue of May 19, at which effective machinery for the licensing of dyestuff importations was created. Following this we have news that Representative Longworth of Ohio has introduced in Congress a bill for the protection of the dyestuff and chemical industries, which was at once referred to the Ways and Means Committee and which, reports lead us to believe, will be reported out favorably in the very near future. This measure imposes duties of from 35 to 50 per cent ad valorem on different classes of dyestuffs and special taxes of from 6 to 10 cents a pound specific. We have reports also from the textile and other dye-consuming industries that business is increasing in no uncertain manner.

All of these facts taken together can mean but one thing—the immediate future of the American dyestuff industry is assured. It remains only for the industry as a whole to register in no uncertain manner its approval of the protective measures taken to induce Congress to make permanent the measures which have already been adopted.

The far-reaching effect of these developments upon the mental state of the dye-consuming interests is not to be underestimated. Whereas consumers a few months ago were hesitating to place orders, believing, as many of them did, that in the very near future quantities of German products would be dumped in this market, they can now be satisfied beyond a reasonable doubt that no competitive German products will be permitted to enter this country. It is true that the committee created by the War Trade Board will, undoubtedly, permit the importation of certain colors essential to our manufacturing industries which have not as yet been successfully produced here, but it is equally certain that these goods will be allowed entry only where actual need of them can be shown and where it is not possible to duplicate them from American sources. In other words, the consumer need no longer hesitate to buy products of American origin through the fear that some of his competitors may obtain cheaper or superior dyes of a similar character from Germany. On the other hand, American manufacturers of dyestuffs can proceed with confidence in the development of the vat colors and other greatly needed dyestuffs, because of the assurance that once these colors are satisfactorily developed in commercial quantities they will be protected, through the committee of the War Trade Board, from German competition on these colors.

All in all, things never looked brighter for the dyestuff industry. Personally, the REPORTER was never in doubt that events would shape themselves as they have, but it is, nevertheless, a keen source of satisfaction to feel that we can rest secure in the outlook for the immediate future.

We should not, however, permit ourselves to become overconfident and rest at ease on what has been accomplished. It must be remembered that the life of the War Trade Board is not eternal and that its functions must be superseded by some body to be created by the new Congress. Until such legislation has been finally enacted the industry as a whole

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must not relax its efforts to keep plainly before Congress the necessity for such action.

MORE ABOUT SWISS DYES

(*Continued from page 8.*)

Another valueless coloring matter, Induribin, was halogenated and Ciba Heliotrope, which is, both dyed and printed, superior to the old purple Alizarine, was obtained thereby.

The first green vat dyestuff, Ciba Green G, was produced by the Society in 1907. It dyes cotton in good, yellowish-green shades which are fast to chlorine and to washing.

By heating Indigo and benzoyl chloride in the presence of copper a condensation product was obtained by the Society in 1910 possessing the typical properties of a vat dyestuff and dyeing both wool and cotton in the claret-colored vat to pure greenish-yellow shades. This product, the exact chemical constitution of which has not been ascertained, is deeply yellow-colored, well crystallized and is called Indigo Yellow 3G Ciba, and is used for wool dyeing either alone or for greens in combination with Ciba Blue 2B. Modifications of the process for producing this Indigo derivative yield Ciba Yellow G and Ciba Yellow 5R. Another class of Indigo derivatives developed later on cannot be vatted with alkaline reducing agents but are valuable as lakes. They include Lake Red Ciba.

In the cotton-dyeing anthraquinone vat colors Cibanone Yellow R and 2R and Cibanone Orange R were produced in 1907. Others were Cibanone Brown B and V, fast brown dyestuffs, and Cibanone Blue 3G. The first black vat dyestuffs, including Cibanone Black, were produced in 1911, and to this series belongs Cibanone Green, produced by treating Cibanone Blue 3G with oxidizing agents, and Cibanone Olive (1912), obtained by the nitration of Cibanone Green.

III

This concludes an outline of some of the principal colors produced by the Society of Chemical Industry in Basle, the list not being by any means a full inventory of the products of its manufacture. While the foregoing condensed history is not a comprehensive history of the dyestuff industry in Switzerland, it nevertheless enables one to trace the development of the industry in that country very accurately through the activities of a company which has been its acknowledged leader. Moreover, it enables the American dyestuff consumer to realize more vividly just what part Switzerland has played in the dye markets of the world and to understand the importance of its role.

As long as the Great War is remembered it must also be remembered that the dye makers of Switzerland have been gallant, active and relentless challengers of the supremacy of the German dye monopolists. Despite their differences in languages, religions and even customs, the people of the Country of Cantons have been first, last and always Swiss to the core, and never by any chance German, French or Italian. Despite efforts beyond all counting to subdue and separate them, they have remained steadfastly true to their traditions and their belief in a sturdy, whole-hearted independence which has won them the respect of all nations.

In short, when one says of a man "He is a Swiss" he may immediately be identified as one of a race which numbers among its ranks a high percentage of expert technologists, careful workmen and inherent possessors of that vision which we term "broad-gauged." This is evidenced by the quality of the products sent out from Switzerland; and, indeed, the famous catch-phrase "High as the Alps in Quality" might well be applied to many more of the Swiss goods than the single one which at present enjoys its benefits. The Swiss know well how to look after themselves and their dependents, pauperism being practically unknown in their country, and hence are ideal citizens of any community. And for their plucky

stand against the German dye barons they deserve the gratitude and applause of the entire world.

OUR DUTY TOWARD THE DYE INDUSTRY

What are without doubt two of the most clearly expressed and, from the standpoint of timeliness, most up-to-the-minute articles in their interpretation of present hopes for the American dyestuffs industry are the following, prepared by Dr. Hesse and Mr. Choate for a recent symposium conducted by the *Manufacturers' Record*. To our way of thinking, they constitute a perfect cross-sectional slice of the existing situation, embodying each essential element in its correct proportion and presenting a straightforward, common-sense view of the whole. We herewith reproduce the first of these two articles.

Conditions for a Permanent American Dye Industry

By Dr. Bernhard C. Hesse

The indispensable condition for a permanent American dye industry is that the American public shall at no time nor in any way get "cold feet" on its frequently and emphatically expressed determination to have that industry complete, self-contained and self-perpetuating, and that without awaiting the consent of any other nation.

American dye makers are of themselves fully determined to have that sort of an industry, because they know better than anybody can tell them that anything less than that is wholly and absolutely useless. The only thing in this world that can defeat such an industry is the American public itself. If the American public is ever stampeded, for any reason whatever, into deserting the American dye industry, then it will surely be "good-by, American dye industry." England, France, Germany, Japan and Switzerland are each and all actually and now prepared to stand back of their dye industries to the absolute limit, and some are ready to cut off competition from any source and in any manner at any time. Under those new conditions, what possible chance can the American dye industry have if it be ultimately discriminated against abroad and deserted at home? Notice, not to be complacently ignored, has been served on us that "tomorrow there will be no pity in the economic battle. All have suffered too much to be generous."

Of course, some will surely object that this course will breed "dye barons." Well, what of it? Are we, as a people, so spineless and so utterly lacking in ingenuity that we dare not or cannot take care of Mr. Dye Baron without killing our dye industry? And, take it at its worst, suppose we do have a few dye barons of our own, would we rather have no dye barons and no dye industry or a dye industry with a few dye barons thrown in? To my mind, we can very

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satisfactorily handle any dye barons that may crop up when we are really on our feet as dye makers. We have simply got to stand by our own in dead earnest, because it is absolutely certain that no one else will. In this industry each nation's hand is now against every other's.

American dye makers know that in order to justify the support and to meet the proper expectations of the American public they must make and deliver just as good and just as varied dyes as cheaply as anyone else can furnish them to the American public, on fair and equitable terms; further, that they must lead or at least be abreast of the leaders anywhere in point of service and in point of newly discovered and developed specialties. They know that thoroughly and absolutely.

The American public must never again be bamboozled into the belief that coal-tar dyes are "raw materials," and then, under the spell of the shibboleth "raw materials must be free," be hypnotized into putting coal-tar dyes on what amounts to the "free list," as was done by free-trader and high-protectionist Southerner and Northerner, Democrat and Republican, alike from 1883 down to 1913. That trick was most beautifully turned six times in succession by dye users, and without a hitch. In 1916 it had a good-sized crimp put into it, but the effects of the old hypnotists were not even then fully worn off, and there are plenty of signs even now that the old hypnotists are again trying to get in their fine work. The American public has at last learned, and thoroughly, that coal-tar dyes are not by any means "raw materials," but that they are, in fact, manufactured articles of very high degree. In future the American public must insist that dye makers be heard and that their judgment be weighed and considered in all legislation aimed at setting their industry on its feet, and that those who have heretofore had all the real say in such matters—that is, dye users—shall be effectively relegated to conspicuous silence and noninterference should they ever again attempt to thwart American dye makers in any way whatsoever.

All salespeople who handle dyed goods at retail or at wholesale, and those who coach them, must break away from their old, old habit of blaming almost every defect in an article complained of on the dyestuff in it; if the goods are tender, "the dye is to blame"; if they crock, "the dye is to blame"; if they fade, the "dye is to blame." In that way they deliberately push the blame onto the dye maker. Chances are that the dye is in nowise to blame. The person who put the dye on the goods or who cut up the goods is almost surely the particular "nigger in the woodpile," and the dye maker is probably in noway involved. The dye maker is responsible only that the dye he delivers is the dye ordered. After that he has no control. The dye maker cannot

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prevent the dye user from employing a dye recommended by the maker for nothing but cotton on a mixture of cotton and wool, or upon linen, or upon wool, or upon silk or mixed-silk fabrics. Nor can the dye maker stand over the dye user all the time and see to it that the dye user applies the dye properly. Of course, the goods may crock or be tender or fade or run if the dye be not properly put on. Again, a fabric properly prepared for exposure to light only and not at all intended to withstand washing or water may be cut up into wash goods. Of course, the dye runs! How can it do otherwise? A properly made fabric has been put to an utterly improper use! So why blame the dye maker out of hand? The changes can be rung on this theme almost without limit, and neither the dye nor the dye maker be properly involved. For that reason, blame for complaints should not be airily charged up to the dye, and particularly the "American" dye, for it is seldom, if ever, properly to be blamed. The dye maker should not be so recklessly loaded down with all the blame for the faults of others; he has troubles enough of his own; make dye users do a little explaining on their own account.

The old fairy tale that because dyes are of American make they are inferior needs to be thoroughly forgotten. Nothing more ridiculous or unfounded was ever offered to the American public.

In short, if the American public will intelligently stand by the domestic dye maker and will at all times fairly judge his goods on their merits, the American dye maker will ultimately provide the American public with a domestic dye industry of great magnitude, strength and resourcefulness; otherwise there will be no permanent American dye industry of consequence.

It is the American public, and it alone, that will make or break the American dye industry.

(Note: Mr. Choate's article on Protecting the American Dye Industry will be printed next week.)

COTTON BLUE B

A new dye recently announced by the National Aniline & Chemical Company, Inc., Cotton Blue B, is an Acid Blue that will especially interest the silk dyer, the paper manufacturer and the ink maker. It will also take the place of a blue for laundry purposes, formerly used.

Cotton Blue B can be employed for the bright blue shades required on cotton yarn, where the question of fastness to washing does not enter into first consideration. Other uses for cotton are restricted to twine and fabric of this character.

As a special dye for paper, it lends itself very well for use in the bluing of bond paper and other high-grade papers, for which ordinary types of Basic Blues do not have sufficient brightness.

To manufacture chemicals the Heyl Laboratories, Inc., have been incorporated under the laws of Illinois with a capital of $10,000.

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TESTING FOR WEIGHTED SILK

The adulteration of silks, which causes so much unrest to-day, is called "weighting," or "loading," silk. Weightings for silks generally are made of three different sorts: Vegetable (sugar and tannic acid), metallic (tin and iron, the latter for black silk only), and mixed (tannic acid, tin, or, for black, iron-tannic acid). Sugar weighting is most noticeable when the silk becomes spotted with water easily and the sugar can be easily tasted. Weighting with tin or iron causes the most trouble.

Testing for weighted silk, while the chemist would possibly resort to hydrochloric acid, dissolving the tin mixture, leaving the thin web of silk, can be done by a simpler process by the layman: Hold a small piece of silk over a burning match, and if sample is pure silk it will burn like pure wool or the combings of hair, the ashes crumbling easily; but if the ashes remain rigid and can be sprung to and fro, like a spring, it shows the presence of tin or iron left after the silk is burned out.—*National Cleaner and Dyer.*

SULPHUR GREEN T

The National Aniline & Chemical Company, Inc., announces the production of a new dye known as Sulphur Green T and said to be the brightest Sulphur Green now available. It has been subjected to exhaustive tests and found to present excellent fastness to light. It is fast to cross dyeing and to stoving, which qualities will make it of especial interest to the woolen industry.

The new dye is a medium green, brighter in quality than the older type, Sulphur Green SAP. It resembles somewhat a pre-war color known as Immedial Green GG.

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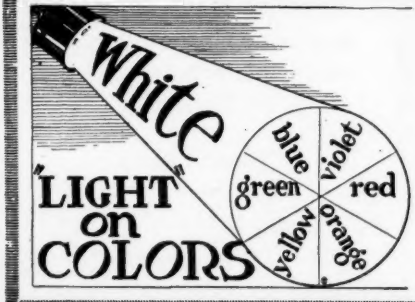

A limited number of samples received for analysis, and working formulae furnished for their reproduction.
Confidental advice to chemists, superintendents and assistants, on matters pertaining to the industry.
Dr. Charles B. Davis
Care of American Dyestuff Reporter
469 West 152nd St., New York City

INQUIRY DEPARTMENT

All classes of chemical work or advice relating to artificial colors, natural dyestuffs, dyewoods, raw materials, extracts, intermediates, crudes, or dyeing chemicals and accessories in general, will be carried out for readers and subscribers of the AMERICAN DYESTUFF REPORTER by this department.

Inquiries of a minor character will be answered on this page, while major matters involving personal investigation, analyses, perfected processes and working formulas, will, if desired, be treated confidentially through the mails. All questions, materials for analysis or letters leading to the opening of negotiations for special work will receive prompt attention if addressed to Inquiry Department, American Dyestuff Reporter, 470 Fourth Avenue, New York City.

S. T. Co.—Question—Can you give me a description of methods employed to strip colors from wool by the nitric acid process; also with bichromate of soda and sulphuric acid? Please state amounts to use and time required to obtain results. The stock should be yellow when finished, such as is used by the blanket mills.

Answer—Stripping with nitric acid is accomplished by heating the wool gradually from 140 deg. to a boil in a bath containing from 2 to 5 per cent of concentrated nitric acid, according to the depth of color to be removed. After about a half-hour it is washed thoroughly. This process of stripping is not to be commended, as the fibers suffer greatly, although it is still used by silk dyers. Chrome stripping is done with 3 per cent of sodium bichromate and 5 per cent of sulphuric acid at a full boil. As the boiling proceeds the wool itself is attacked and the color becomes darker; therefore it is well to stop as soon as the original color has been stripped. If dyeing is to be done on top it is advisable to reduce the free chromic acid to the green chromium salt by the use of lactic or formic acids. The yellow color produced by chrome stripping will soon turn dark and finally green when exposed to light, but the yellow from the nitric acid process is more permanent.

K. L. R.—Question—In changing over from Direct Black to Sulphur Black on raw stock we have had some trouble from dryer fires that appear to be due to the Sulphur Black. Can you give us any general information on this subject? We think that it is more a matter of general conditions than any specific dye, and we should like to know what conditions tend toward this effect and what precautions to observe to avoid trouble.

Answer—A great deal of the Sulphur Black now on the market contains a high percentage of free sulphur, which is always likely to cause spontaneous combustion. It is well to test your dyestuff for free sulphur and to purchase only such as shows a minimum. We believe that the Sulphogene Blacks of Du Pont are about

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We urge that the Textile Industry support stand of the American Dyestuff Reporter for an American Dyestuff Industry.

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as free from this fault as any colors on the market. In addition to using care in the selection of dyestuffs, you should be careful to wash the stock thoroughly after dyeing in order to eliminate any free sulphur which may be present. After this precaution is taken, only the usual care in not overheating the dryer should be necessary to avoid trouble. On another page of this issue will be found a note on a new series of sulphur blacks which, it is claimed, will not heat spontaneously on drying.

NOTES OF THE TRADE

Building operations were begun at once to replace the offices and warehouse of the Hellenic Chemical & Color Company, 1 Cedar Street, New York City, which were completely destroyed by fire last week. A short circuit in the basement of the building was responsible for the conflagration. In the meantime, according to an announcement sent out to the trade, temporary offices for the company have been established at 240 Broadway, with the telephone number, Barclay 7459.

Frederick Mason, for many years connected with the Kalle Color & Chemical Company in the Providence office of that concern, and who was more recently associated with Edward C. Foster, of Providence, has now become associated with the Newport Chemical Works, Inc., and will in future be in charge of the company's Providence district.

A branch office has been opened in Akron, Ohio, by the National Aniline & Chemical Company. The Akron branch, which is housed in the Peoples' Savings & Trust Building, has been opened in order to give better service to the Mid-western trade, and especially the rubber industry. Sales work for the Intermediates Department is in charge of H. H. Replogle, who has been identified with the rubber industry for many years.

Dr. Carleton Ellis, president of the New Jersey Testing Laboratories, describes in U. S. Patent 1,278,307, a series of direct dyeing sulphur blacks which are produced by heating "nitrated aromatic material" comprising a phenol, with a reagent comprising aqueous alkaline sulphide material, until complete reduction of all nitro groups is effected. This produces a product not spontaneously heating on drying.

H. G. Bettler, Inc., chemical compounds of all kinds, has been formed in Delaware with a capitalization of $100,000. Incorporators, Harry G. Bettler, Benjamin F. Prorandie, Chicago; A. Millertelful, Minnetka, Ill.

Kenneth Mackenzie, Ltd., has been incorporated with a capital of approximately $25,000 in Stornoway, Scotland, to carry on the business of weavers, dyers, bleachers and finishers of woolen and worsted goods.

To take over the business of William H. Whiting & Company, the Whiting Wool Company has been incorporated under the laws of Pennsylvania with a capital of $75,000. The concern will handle pulled and scoured wools, and offices will be in Philadelphia.

The officers and directors of the Chemical Foundation, Inc., consist of: President, Alien Property Custodian Francis P. Garvan; vice-president, Col. Douglas I. McKay, late Colonel, General Staff, vice-president of J. G. White & Company, and Deputy and Police Commissioner of the City of New York under Mayors Gaynor, Kline and Mitchel; treasurer and secretary, George J. Corbett, assistant secretary of the Central Union Trust Company.

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